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proceed from the region of the "zona"; and probably have their origin in the cells by which the latter is surrounded. If so, the author thinks we cannot suppose them to arise in any other way than that which, according to his observations, appears to be the universal mode of reproduction; namely, by division of the nuclei of the parent cells. Nor can we suppose that minuteness is any hindrance to their subsequent increase by the same means.

December 17, 1840.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

The following communications were made to the Society, viz.

1. "Present state of the Diamond Mines of Golconda." By T. J. Newbold, Esq., of the Madras Army, A.D.C. to Major-General Wilson, K.B. Communicated by S. H. Christie, Esq., M.A., Sec. R.S.

The author gives an account of the tract of country in which the diamond mines of Golconda are situated, and of the processes by which the diamonds are obtained. The latter consist merely in digging out the rolled pebbles and gravel, and carrying them to small square reservoirs, raised on mounds, having their bottom paved with stones, and then carefully washing them. Dry weather is selected to carry on these operations, in order to avoid the inconvenience and expense of draining. A description is then given of the mines of Banaganpully, Munimudgoo, Condapilly, Sumbhulpoor, and Poonah in Bundlekund.

2. "Magnetic-term Observations made at Milan." By Professor Carlini, Director of the Observatory at that place: also "Magnetic-term Observations made at Prague." By Professor Kreil, Director of the Observatory at that place.

3. "On the Production of Heat by Voltaic Electricity." By J. P. Joule, Esq. Communicated by P. M. Roget, M.D., Sec. R.S.

The inquiries of the author are directed to the investigation of the cause of the different degrees of facility with which various kinds of metal, of different sizes, are heated by the passage of voltaic electricity. The apparatus he employed for this purpose consisted of a coil of the wire, which was to be subjected to trial, placed in a jar of water, of which the change of temperature was measured by a very sensible thermometer immersed in it: and a galvanometer, to indicate the quantity of electricity sent through the wire, which was estimated by the quantity of water decomposed by that electricity. The conclusion he draws from the results of his experiments is, that the calorific effects of equal quantities of transmitted electricity are pro-